

# Youth Self-Report Factor Structure: Detecting Sex and Age Differences in Emotional and Behavioral Problems among Spanish School Adolescent Sample

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## Abstract

The Youth Self-Report (YSR/11-18) is a widely used child-report measure that assesses problem behaviors along two “broadband scales”: internalizing and externalizing. It also scores eight empirically based syndromes and DSM-oriented scales and provides a summary of total problems. Although the YSR was designed for youths ages 11-18, no studies have systematically evaluated whether youths under the age of 11 can make valid reports using the YSR broadband, syndrome and DSM-oriented scales. It is a parallel form to the caretaker-completed Child Behavior Checklist (CBCL) and teacher-completed Teacher Report Form (TRF). Few studies related to YSR/11-18 (Achenbach, & Rescorla, 2000, 2001) factor structure were carried out in Spanish children and adolescent population. This study analyses the factor structure of this assessment tool, in 961 Spanish adolescents attending school from 13 to 18 years old. A principal components method was used to extract the factors followed by a Varimax rotation. According to current research, each sex was treated separately, and only items referred to misbehavior (105 out of 119) were included. Seven first-order common factors were found in both, boys and girls: Anxious/Depressed, Somatic Complaints, Delinquent Behavior, Aggressive Behavior, Attention Problems, Thought Problems and Relational Problems. Factoring of these seven syndromes led to a single second-order factor in younger males. Older males and females showed labeled internalize and externalize symptoms. These results resembled that obtained in former studies with Spanish population.

**Keywords:** youth self report, factor structure, adolescents, internalizing versus externalizing syndromes

## 1. Introduction

The Youth Self-Report for Ages 11-18, YSR/11-18 (Achenbach, 1991b) was formed based on the Child Behavior Checklist for Ages 4 to 18 (CBCL/4-18) (Achenbach, 1991c) for the purpose of evaluating psychopathological manifestations (behavior and emotional problems), and psychosocial competencies of children and adolescents aged 11 to 18. The YSR/11-18 can be supplemented with the version addressing parents (CBCL/4-18) and the one for teachers, the Teacher's Report Form for Ages 5 to 18 (TRF/5-18) (Achenbach, 1991a). It is a way of systematically acquiring information on various different competencies and behavior problems in a format similar to the CBCL and the TRF.

### 1.1 Composition of the YSR/11-18

The YSR/11-18 has two parts. The first consists of 17 items and evaluates the psychosocial competencies of young people: participation and success in a variety of activities and social contexts (sports, social and academic skills). The second part has 112 items, of which 16 evaluate pro-social or adaptive behavior, while the rest (96 items) concentrate on problematic behavior.

According to Achenbach (1991b), the problem scales are grouped on two levels. The first consists of the “narrow-band” syndromes (anxiety/depression, isolation, aggressive behavior, etc.) empirically derived from a principal component analysis of the items. The second, “broad-band” level refers to a higher hierarchical structure derived from a second-order factor analysis, which differentiates two general psychopathological patterns, internalizing and externalizing syndromes. Achenbach (1991b) concluded that there are eight self-reported “narrow-band” syndromes that are the same for both sexes: withdrawn, somatic complaints, anxious/depressed (the three comprising the broadband internalizing scale), delinquent behavior, aggressive behavior (the two comprising the broadband externalizing scale),

social problems, thought problems and attention problems. Some first-order syndromes are considered “mixed”, as their factor weight is insufficient for them to be assigned to one of the two broadband syndromes. The YSR/11-18 demonstrated good reliability and validity data in a study by Verhulst, Van der Ende, & Koot (1997), who reported Cronbach alphas of 0.61 for boys and 0.67 for girls in a sample of a normal population of youths; the highest values were found in clinical samples: 0.73 in boys (0.73) and 0.70 in girls. In a French population, the YSR/11-18 scales were highly correlated, the Cronbach alpha coefficient for them varied from 0.83 to 0.92 and the test-retest correlations were robust (Wyss, Voelker, Cornock, & Hakim-Larson, 2003). In United States, results demonstrated that younger youths were able to provide reliable reports on the YSR broad-band (Internalizing, Externalizing) scales, though less so on the narrow-band scales. Across all scales, the externalizing scales performed more favorably than the internalizing scales among both younger and older youth (Ebesutani, Bernstein, Martinez, Chorpita, & Weisz, 2011). Despite the fact that the Youth Self-Report has been used in many studies throughout the world, little is known about the equivalence of the factor structure of this measurement for immigrant adolescents. In this line, Verhulst, Stevens, van de Schoot, & Vollebergh (2014) reported that the scales of the YSR/11-18 were invariant across all ethnic groups (native Dutch, Surinamese, Turkish and Moroccan) and over time. Together, the results indicated that this instrument can be used for developmental studies in these immigrant populations.

### *1.2 Validation of the YSR/11-18 in Spanish Population*

The YSR/11-18 was validated in the general Spanish population by Lemos, Fidalgo, Calvo, & Menéndez (1992a, 1992b, 1992c). In the first study (Lemos et al., 1992a), the girls had high scores in internalizing behavior (anxious/depressed and somatic complaints), while the boys had higher externalizing scores (socially maladaptive and aggressive behavior). Furthermore, the scores for problem behavior in Spanish adolescents were higher than those found in European and American adolescents. Similar results were found in the study by Achenbach (1991b), in which the greater tendency of girls to internalize problems and of men to externalize them is consistent with the information provided by parents and teachers. Lemos et al. (1992a) reported four internalizing factors, of which three were given the same name for both sexes (Anxious/Depressed, Somatic Complaints and Relational Problems), while the fourth factor (Anxious) was specific to boys. They also found four externalizing factors, three of which were common to boys and girls (Delinquent behavior, Attention Seeking and Aggressive Behavior) and one specific to boys (Antisocial behavior). The factor Thought problems was the only one identified in the mixed syndrome. Abad, Forns, Amador, & Martorell (2000) analyzed the version used by Lemos et al. (1992a), reporting that the internal consistence was more homogeneous and higher for the internalizing and externalizing syndromes than for the narrow-band. Furthermore, the internalizing syndrome showed covariation with the Krug Clinical Analysis Questionnaire (CAQ) Depressed and Psychological maladjustment scales to the contrary, no consistent pattern has been demonstrated in the relationship between the externalizing syndrome and the CAQ. There is therefore a more consistent pattern in the relationship between the internalizing than the externalizing syndrome and neuroticism and anxiety measurements with regard to other scales (Abad et al., 2000). The third Lemos et al. study (1992c) reported a pattern of positive correlations between the internalizing syndrome and the Eysenck Personality Questionnaire-Junior Neuroticism scale. The externalizing syndrome is correlated with all of the scales (mainly with Psychoticism, Antisocial Behavior and Sincerity), except Extraversion.

The Lemos, Vallejo, & Sandoval study (2002) derived eight main syndromes different from those found by Achenbach (1991b): depressed, verbal aggressive, delinquent behavior, thought problems, somatic complaints, social relations problems (isolation), attention seeking and phobic-anxious behavior. Moreover, two second-order factors were found to pertain to internalizing and externalizing psychopathology (emotional vs. behavioral disorders). Posteriorly, Sandoval, Lemos, & Vallejo (2006) aimed to provide a standardization of self-reported competences and emotional/behavioral problems in Spanish adolescents, using the Achenbach's Youth Self-Report. The YSR was completed by 2822 adolescents aged 11-18 years, recruited from secondary schools in two regions of Spain. There were significant differences in total behavior problems and in most problem scales in boys and girls, scoring boys higher on externalizing syndromes, whereas girls score higher on internalizing syndromes. Males' mean scores were higher than females' scores for social competence. Age effects also showed significant differences with respect to internalizing problems, thought problems, social problems and depression. To test the overall range of variations across cultures, comparisons were made between broad band and narrow band measures of the YSR in Spanish adolescents and those from other countries. Gender differences in the YSR were similar to those found across different cultures; there is a consistent trend to increase behavioral problems with age; and social competence seem to be a relevant protective factor against behavioral problems. In this line, Kirchner, Forns, & Amador (2006) reported that girls' scores increased on delinquent and aggressive behavior scales and, therefore on externalizing scores, while the boys' scores increased on attention problems and delinquent behavior and decreased on anxious/depressed, social problems' and internalizing scores. In addition, the test-retest intra-class correlations for the broad-band scales ranged between 0.62 (internalizing)

and 0.68 (externalizing) and for the narrow-band scales between 0.37 and 0.67. In other study, with the objective to study the incremental validity of the DSM-Oriented scales of the YSR/11-18, Lacalle, Domènech, Granero, & Ezpeleta (2014) found that the oriented scales showed significant incremental validity in conjunction with the empirical syndromes scales for discriminating DSM-IV (American Psychiatric Association, 2000) diagnoses, and considerable incremental validity in conjunction with the diagnoses obtained through the diagnostic interview for predicting the level of functional impairment.

In order to diagnose a “behavioral disorder”, the last update of the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5, American Psychiatric Association, 2014) suggests having carried out in the past 12 months at least three of the following behaviors: 1) aggression towards people or animals: bullying, intimidation, threats, fights, physical cruelty, rape...; 2) deliberate destruction of others' property; 3) cheating or theft: lying, cheating, stealing...; 4) severe breach of rules: forging notes, truancy, going out at night without permission.

### *1.3 Modifications and Several Uses of the YSR/11-18*

Achenbach and Rescorla (2000, 2001) modified the YSR/11-18, editing some of the items and changing the number corresponding to problematic and pro-social behavior, leading to a different version from Achenbach (1991b). This new version also has two parts. The first consists of 17 items referring to different psychosocial competencies, such as sports, social and academic skills, while the second is made up of 112 items, of which 14 describe adaptive or pro-social behavior and the remaining 98 measure problem behavior (actually 105 items, since Item 56 is divided into 8 sub-items referring to physical problems having no known medical cause). Achenbach, Dumenci, & Rescorla (2001), after having combined some categories that coincided with DSM criteria, also constructed scales for the following categories: affective problems, anxiety problems, somatic problems, attention/hyperactive problems, oppositional/defiant problems and behavior problems.

Achenbach (1978) founded an evaluation and diagnostic system known by the initials ASEBA (Achenbach System of Empirically Based Assessment). The studies done by Achenbach and his colleagues to date have led to a problematic or pathological behavior classification system for children and adolescents, and another for related diagnosis. The YSR/11-18 is included in this classification system. The YSR/11-18 (Achenbach, 1991b) has been widely used in clinical practice and in psychopathological research due to its usefulness in establishing a quantitative taxonomy. In the last decade, this measurement was used in different populations in order to explore distinct objectives such as investigate which YSR/11-18 items or scales can be used best to predict anxiety disorders in adolescents (Ferdinand, 2007), determine its contribution in the diagnosis of psychiatric comorbidity of juvenile primary headache disorders (Toros et al., 2010), examine emotional and behavioral problems among school adolescents with and without reading difficulties as measured by the YSR/11-18 (Undheim, Wichstrom, & Sund, 2011), test the measurement invariance of the attention and thought problems subscales in a population-based sample of adolescents with and without epilepsy (Ferro, Boyle, Scott, & Dingle, 2014), examine the relationship between weight and psychological distress in Hispanic with excess weight (Yates et al., 2014), detect mental health problems in children's and adolescents in residential care (Sainero, del Valle, & Bravo, 2015), examine the prevalence and characteristics of the dysregulation profile of adolescents based on data from the YSR/11-18 (Jordan, Rescorla, Althoff, & Achenbach, 2016), investigate to what extent emotional and behavioral problems impact on and explain the academic performance of adolescents (Rosso, & Helena, 2017), and identified population-representative youth surveys containing questions on self-reported child maltreatment (Laurin, Wallace, Draca, Aterman, & Tonmyr, 2018).

### *1.4 Social, Cultural and Spanish School and Family Contextualization Model*

Socialization is a process by which humans acquire the values, beliefs, norms and forms of proper behaviour of the culture to which they belong (Musitu, & Cava, 2001). The main goal of this process is for one to take the socially valued objectives as guiding principles of his own conduct, ie, get him take as his own a set of internally consistent values that will become a filter for evaluating the acceptability of his behavior (Musitu, & Cava, 2001). Therefore, the periods of childhood and adolescence are critical in this process and, consequently, family has been considered a particularly privileged place for the transmission of these cultural categories. In fact, social scientists have given special attention to the family socialization over the past few decades. An essential aspect in the study of family socialization process has been its effect on personality and adjustment of children and adolescents. We must not forget that child socialization is the primary responsibility in most societies. Thus, within the processes of family interaction, those that aim to socialize the child in a certain system of values, norms and beliefs occupy a major part. These socialization processes are undoubtedly part of the most widely recognized family functions; in fact, it's around socialization where the family roles are distributed and the expectations and parent-child behaviors are delimited. In this sense, it is possible to claim that socialization is perhaps the cornerstone of family life. The socialization process continues at school, whereas children and adolescents not only acquire new contents, values and standards that prepare them for adulthood,

but also create new relationships with peers and establish relations of friendship and companionship (Cava, & Musitu, 2002; Martínez, 2013). Additionally, the school is the first formal contact with authority figures. In this scenario, one of the problems that concerns most of the teachers, as well as families and professional intervention, is school violence.

Parents, relevant socialization agents, represent culture, explicitly or implicitly transmitting social values to their sons and daughters. Family context has considerable influence on the development of social behavior, and there is much empirical evidence confirming if parents: 1) provide a safe feeling of attachment, 2) strongly insist that their children should not harm others, 3) make them repair the harm when they have hurt and/or attacked others, 4) are altruistic models in their relations with others, 5) reinforce through social approval their children's spontaneous acts of sharing, helping, or cooperating, and 6) adopt a style of inductive discipline from which they discuss the rules, this increases the probability of the emergence of prosocial behavior in their children (see Garaigordobil, 2003, 2008). Family is the main socializing agent and has therefore received much attention by researchers. The influence of variables such as the family structure, cohesion, the presence of conflicts, parenting styles...was explored with regard to the psychological, social, and emotional adjustment of the children. In the same vein, the present study analyzes the connections between antisocial behavior and family contextual variables such as parents' level of acceptance-involvement and coercion-imposition, as well as the educational or socialization styles used by the mothers and fathers with their sons and daughters.

Traditionally, studies about parenting socialization have first analyzed how parents teach their children and then the effect that this socialization generates in the various aspects of their lives of children. Overall, in the history of the studies on this theme, scholars have identified the existence of two main dimensions: Acceptance/Involvement and Severity/Imposition (Barber, Chadwick, & Oerter, 1992; Foxcroft, & Lowe, 1991; Smetana, 1995). However, many other labels, were associated with these dimensions: Symonds (1939) labeled them as Acceptance/Dominance; Baldwin (1955), Involvement/Hostility; Becker (1964), Affection/Restriction; Sears, Maccoby and Levin (1957), Affection/Strictness; and, Schaefer (1959), Love/Control. For example, Linares, Rusillo, de la Torre Cruz, de la Villa Carpio Fernández, & Arias (2011) reported, in Spanish sample composed by 469 secondary school students (aged between 12 and 18), that the adolescents presented differences in perception of the educational practices of both parents as a function of their gender. Negative parenting practices were positively related to adolescents' internalizing and externalizing problems, whereas positive practices were negatively related to externalizing problems. Moreover, differences between boys and girls were found in predictor variables of problems, and the predictive power of the variables was higher for externalizing problems.

One can better understand these dimensions when considered according to a Cartesian coordinates where the X-axis represents the acceptance/Involvement dimension related to those parenting practices connected with the use of warmth, dialogue and understanding of the behavior of the children. The positive aspect of this axis relates to the more frequent use of this kind of practice and the negative one to the less frequent. The axis of the ordinates, on its turn, represents the Strictness/Imposition dimension, characterized by the use of coercive practices used in the control of the behavior of children, i.e., parents who resort to verbal and physical punishment to control the behavior of their children. In connection with this dimension, the positive aspect of the axis of the ordinates – Y-axis – is related to the repeated use of this sort of practice by parents and the negative one to the rare or no use at all of them.

Literature comparing the relations between the styles of parenting socialization and variables related to the psychological and psychosocial adjustment of children have found different pattern of results between different cultural context. The traditional studies carried out with Anglo-Saxon cultures indicate that children of authoritative parents show better psychological and psychosocial adjustment than children whose parents resort to other styles (Baumrind, 1991; Chao, 2001; Christian, 2002; Steinberg, Lamborn, Dornbusch, & Darling, 1992). This result, however, does not cover other cultural contexts such as American families of Asian or African origins (Dornbusch, Ritter, Liederman, Roberts, & Fraleigh, 1987; Steinberg, Mounts, Lamborn, & Dornbusch, 1991). Furthermore, the studies carried out within Spanish and Italian cultural contexts concluded that the use of an indulgent style of socialization promoted a better psychological and psychosocial adjustment of the children than the use of an authoritative style (DiMaggio, & Zappulla, 2014; Fuentes, García, Gracia, & Alarcón, 2015).

### *1.5 Rationale and Importance of Research*

The majority of the studies done in Spanish and North American adolescent populations have used the Achenbach (1991b) version of the YSR/11-18, as mentioned above. In fact, this instrument has been translated into 59 languages and led to over 300 studies, of which some have attempted to determine its factor structure. However, to date, few studies have used the Achenbach, & Rescorla (2000, 2001) version of the YSR/11-18, especially for factor analysis (Ivanova et al., 2007; Lambert, Essau, Schmitt, & Samms-Vaughan, 2007; O'Keefe, Mennen, & Lane, 2006). The few publications on the version of these authors indicates the need for this instrumental study (Carretero-Dios, & Pérez,

2007; Montero, & León, 2007) in a sample of Spanish school-age adolescents in order to clarify its factor structure and examine the relationships existing among the various factors found in both sexes. The study also examines differences between young and old adolescents in internalize and externalize symptoms of the Youth Self-Report.

## 2. Methodology

### 2.1 Participants

The sample was made up of 961 young secondary school students in the Province of Granada (Spain) selected by incidental sampling, of which 412 were boys (42.90%) and 549 were girls (57.10%), aged 13 to 18 ( $M = 15.63$ ;  $SD = 1.32$ ). Approximately two thirds of the adolescents ( $n = 652$ ; 67.80%) were in 2nd, 3rd and 4th year of Obligatory Secondary Education (middle school); the rest were in *Bachillerato* (high school) ( $n = 174$ ; 18.10%) and other occupational education courses ( $n = 135$ ; 14%), such as hotel and restaurant, hairdressing, cooking, etc.

### 2.2 Instrument and Procedure

The 9-01 version of the YSR/11-18 by Achenbach, & Rescorla (2000, 2001), translated by the Autonomous University of Barcelona *Unitat d'Epidemiologia i Diagnòstic en Psicopatologia del Desenvolupament*, was given at 13 schools. Written consent was requested of professors and parents of underage adolescents. The data was collected during tutoring classes. The evaluation of the adolescents was always controlled by the same person, who in all cases was the one responsible for providing the instructions and directions for answering the questionnaires, which ensured that they were the same across the entire sample. It was given collectively and anonymously in a single session approximately 60 minutes long. 15 youths who did not agree to the evaluation and 9 others who left without finishing were excluded from the study.

### 2.3 Analysis of Results

The SPSS statistical package, version 12.0 was used for all of the analyses. Of the 112 items on the YSR/11-18 (actually 119 because Item 56 includes 8 sub-items) only 105 items that describe problem behavior were selected for later analysis to derive first and second-order syndromes. 14 items (6, 15, 49, 59, 60, 73, 80, 88, 92, 98, 106, 107, 108 and 109) that refer to desirable social behavior were omitted from the analysis as proposed by Achenbach, & Rescorla (2001). These items are not saturated in the first-order syndromes, but all of them are saturated in the same factor alluding to desirable social behavior. It was therefore decided to eliminate them from the factor analysis. The idea is to subject the problem emotional and behavior items to factor analysis, extracting the factors by principal components with varimax rotation to derive the first-order syndromes for each sex. The main syndromes were found later by extraction from the factor structure common to samples of both boys and girls. The methodology used by Achenbach (1991a) and Achenbach, & Rescorla (2001) was taken into consideration as much as possible for this to attempt to replicate the factors found in the population of American youths, following the steps below:

1. Factor analysis of the correlations matrix for the items for each sex using the principal components method
2. Varimax rotation of 7, 8, 9 and 10 components for the male sample and 7, 8 and 9 components for girls.
3. Select the rotation providing the set of items that tends to concur, most theoretically coherent.
4. Derive the main symptoms from the items common to both sexes and to main syndromes.
5. Calculate correlations between first-order syndromes separately for each sex and between main syndromes.
6. Principal components analysis of the above correlation matrices.
7. Varimax rotation of the components found.

## 3. Findings

Principal components factor extraction applied to the correlations matrix of 105 problem items on the YSR/11-18, found 33 and 29 factors with eigenvalues over 1, explaining 64.88% and 61.459%, respectively, of the total variance in data for the samples of boys and girls. Then the highest factors (7, 8, 9 and 10 factors for boys and 7, 8 and 9 factors for girls) were subjected to orthogonal rotation (Varimax), where the rotation converged at 16, 19 and 21 iterations for the first and at 10 and 19 iterations for the second. The seven principal components found in the male and female samples, their eigenvalues, and variance explained are shown in Table 1.

Table 1. Factor structure for boys and girls. Only those factors with eigenvalues over 3 are included (N=961)

Factor Boys	Category	Eigenvalue	Variance explained	Factor Girls	Category	Eigenvalue	Variance explained
1	Anxious/ depressed	5.21	4.96	1	Anxious/ depressed	6.05	5.76
2	Aggressive behavior	5.14	4.89	2	Aggressive behavior	5.74	5.46
3	Somatic complaints	5.04	4.80	3	Somatic complaints	5.46	5.20
4	Delinquent behavior	4.40	4.19	4	Attention problems	5.45	5.19
5	Thought problems	4.03	3.83	5	Delinquent behavior	4.43	4.22
6	Attention problems	3.79	3.61	6	Thought problems	4.30	3.09
7	Relations problems	3	2.84	7	Relations problems	3.73	3.56

Total variance explained: Boys = 29.15%; Girls = 32.51%

Variance explained in the space defined by the factors: Boys = 64.88%; Girls = 61.45%

As shown in Table 1, the factor structure of the two samples is identical, with seven factors with eigenvalues over 3. Within the two factor structures, the categories anxious/depressed, aggressive behavior, somatic complaints and relational problems appear in first, second, third and seventh place. The two structures differ in the specific weight of three categories: delinquent behavior, thought problems and attention problems, appearing in fourth, fifth and sixth place for boys and in fifth, sixth and fourth place for girls.

The different categories assigned to the factors found were determined by analyzing the content of the items that saturate each. That is, each cluster of items under a certain factor describes problem behavior that defines a theoretical category. Factors were thus labeled according to the theoretical content of their items. Items over 0.30 are considered saturated, while those that were under this were eliminated, since they would explain less than 10% of the factor variance. Along this line, Comrey (1985) argues that 0.30 is a reasonable value for its use for orthogonal factor weights. Tables 2 and 3 show the items with weights of 0.30 or over which make up the first-order syndromes for boys and girls, respectively.

Table 2. First-order syndromes, derived by Varimax for boys (N=412)

<u>Anxious/depressed</u>			<u>Attention problems</u>		
Item	Description	Weight	Item	Description	Weight
35	Low self-esteem	0.54	8	Can't concentrate/pay attention	0.58
38	Laughed at	0.51	5	Doesn't enjoy many things	0.57
33	Feels unloved	0.49	4	Doesn't finish things	0.51
31	Afraid to do something wrong	0.49	13	Gets distracted	0.48
34	Ideas about persecution	0.48	61	Low school performance	0.44
103	Unhappy and depressed	0.46	10	Hard to sit still	0.33
50	Anxious or afraid	0.45	9	Hard to not think about anything	0.33
52	Guilty	0.42	78	Attention deficit/distracted	0.32
29	Fears	0.41			
27	Jealous	0.40		<u>Delinquent behavior</u>	
11	Depends on adults	0.37	Item	Description	Weight
32	Perfectionist	0.35	23	Disobedience at school	0.62
12	Lonely	0.33	28	Rule-breaking	0.58
48	Believes he is not accepted	0.32	22	Disobeys parents	0.55
112	Worried	0.31	26	Does not feel guilty	0.44
14	Crying	0.30	39	Problem relations	0.40
			25	Doesn't get along well with others	0.38
	<u>Aggressive behavior</u>		19	Tries to get attention	0.35
Item	Description	Weight	21	Property destruction	0.33
93	Talks to much	0.60	57	Hitting others	0.32
90	Dirty language	0.54	16	Treats others badly	0.31
94	Likes to be annoying	0.49	74	Attention seeking	0.30
45	Nervous or tense	0.49			
68	Shouts a lot	0.46		<u>Thought problems</u>	
95	Strong character	0.46	Item	Description	Weight
104	Raises his voice	0.44	84	Strange behavior	0.429
96	Thinks too much about sex	0.44	85	Strange thoughts	0.394
41	Does things without thinking	0.42	91	Thinks about killing himself	0.366
97	Threatens	0.38	40	Hears nonexistent sounds	0.346
87	Moody	0.33	110	Wishes he were the opposite sex	0.331
86	Stubborn	0.32	66	Repetitive behavior	0.317
43	Lies/cheats	0.30			

<u>Somatic complaints</u>			<u>Social relations problems</u>		
Item	Description	Weight	Item	Description	Weight
56g	Vomiting	0.68	75	Shy	0.675
56c	Nausea	0.65	71	Insecure	0.613
56a	Pain or discomfort	0.62	69	Reserved attitude	0.524
56f	Stomachaches	0.59	77	Sleeps more than others	0.504
56b	Headaches	0.58	65	Refuses to speak	0.366
51	Dizziness	0.51	79	Speech problems	0.324
56d	Eyes bother him	0.47			
56h	Other somatic complaints	0.45			
58	Scratches himself	0.40			
56e	Skin problems	0.39			
46	Jerking	0.39			
54	Exhaustion	0.33			
53	Eats too much	0.30			

Table 3. First-order syndromes, derived by varimax for girls (N=549)

<u>Anxious/depressed</u>			<u>Delinquent behavior</u>		
Item	Description	Weight	Item	Description	Weight
33	Feels unloved	0.69	28	Rule-breaking	0.67
35	Low self-esteem	0.66	22	Disobeys parents	0.61
12	Lonely	0.64	23	Disobedient at school	0.60
34	Ideas about persecution	0.52	21	Property destruction	0.49
38	Laughed at	0.49	25	Doesn't get along well with others	0.41
32	Perfectionist	0.48	19	Tries to get attention	0.37
18	Attempted suicide	0.48	43	Lies or cheats	0.37
103	Unhappy and depressed	0.48	26	Does not feel guilty	0.37
27	Jealous	0.45	39	Problematic relations	0.37
14	Crying	0.43	20	Property destruction	0.35
31	Afraid to do something wrong	0.40	37	Fights	0.30
30	Afraid to go to school	0.40			
24	Malnutrition	0.36			
36	Self-destructive	0.33			
112	Worried	0.31			
62	Clumsy, uncoordinated	0.30			
<u>Somatic complaints</u>			<u>Thought problems</u>		
Item	Description	Weight	Item	Description	Weight
56g	Vomiting	0.65	70	Sees things that do not exist	0.56
56c	Nausea	0.64	85	Thinks strange thoughts	0.51
56f	Stomachaches	0.62	84	Strange behavior	0.48
56a	Pain or discomfort	0.61	40	Hears nonexistent sounds	0.35
56e	Skin problems	0.57	61	Low school performance	0.34
58	Scratches herself	0.57	7	Boasts, conceited, braggart	0.30
56h	Other somatic complaints	0.56			
56b	Headaches	0.55			
51	Dizziness	0.52			
54	Exhaustion	0.47			
55	Overweight	0.34			
<u>Aggressive behavior</u>			<u>Attention problems</u>		
Item	Description	Weight	Item	Description	Weight
105	Consumes alcohol or drugs	0.62	78	Attention deficit, distracted	0.55
97	Threats	0.59	10	Hard to sit still	0.50
101	Cuts class, absence	0.57	68	Shouts a lot	0.49
94	Likes to be annoying	0.54	45	Nervous or tense	0.49
99	Smokes cigarettes	0.52	93	Talks too much	0.48
96	Thinks too much about sex	0.51	13	Absentminded	0.44
90	Dirty language	0.47	41	Does things without thinking	0.44
89	Distrustful	0.46	83	Keep useless things	0.40
91	Thinks about killing herself	0.44	74	Seek Attention	0.38
104	Raises her voice	0.44	8	Can't concentrate /pay attention	0.36
2	Drinks without permission	0.43	9	Hard to think not about anything	0.31
110	Wishes she were opposite sex	0.41			
95	Strong character	0.40			
16	Treats others badly	0.31			
87	Moody	0.31			
			<u>Relations problems</u>		
Item	Description	Weight	Item	Description	Weight
			75	Shy	0.65
			69	Reserved attitude	0.63
			71	Feels ashamed, ridiculous	0.57
			65	Refuses to talk	0.45
			79	Speech problems	0.39
			50	Anxious or afraid	0.39
			77	Sleeps more than others	0.33
			102	Lacks energy	0.31

As shown in Table 2, in the male sample, Item 10 (Hard to sit still) had a factor weight of 0.44 in the category "aggressive

behavior” and another of 0.33 in attention problems, although it was included in the second because of its content. Thus, Items 12 (Loneliness), 14 (Crying) and 32 (Perfectionism) had factor weights of 0.52, 0.37 and 0.41 in the categories “attention problems”, “somatic complaints” and “delinquent behavior”, respectively, and others of 0.33, 0.30 and 0.35, respectively in the category “anxious/depressed”, where they were included because of their content. Even though Item 18 (Suicide attempts) showed factor weights of 0.32, 0.34 and 0.37 in the categories “somatic complaints”, “thought problems” and “attention problems”, respectively, it was not included in any of these three categories because it did not coincide with their content. Items 21 (Property destruction), 57 (Hitting others) and 74 (Attention seeking) also showed factor weights of 0.33, 0.32 and 0.30, respectively, and were considered in the category “delinquent behavior”, even though it had weights of 0.49, 0.37 and 0.44 in the “somatic complaints” and “social relations problems” categories, respectively. Item 78 (Lack of attention, distracted) had factor weights of 0.36, 0.32 and 0.37 in the “delinquent behavior” and “thought problems” categories, and were included in the second because they coincided with its content.

As shown in Table 4, in the sample of girls, Item 24 (Malnutrition) had factor weights of 0.36 and 0.40 in the categories “anxious/depressed” and “delinquent behavior”, respectively, and was included in the first because it coincided with the content. Similarly, Item 37 (Fights) had factor weights of 0.30 and 0.35 in the “delinquent behavior” and “thought problems” categories, respectively, and was considered in the first because the content coincided. Finally, Item 102 (Lack of energy) showed factor weights of 0.31 and 0.42 in the “relational problems” and aggressive behavior” categories, respectively, and was included in the first because of the coincidence in content. In this way, and as shown in Tables 2 and 3, the number of items that saturated with over 0.30 in the seven categories labeled varied in the samples of boys and girls. The seven categories, “anxious/depressed”, “aggressive behavior”, “somatic complaints”, “attention problems”, delinquent behavior”, “thought problems” and “relational problems” clustered 16, 13, 13, 8, 11, 6 and 6 items, respectively for boys and 16, 15, 11, 11, 11, 6 and 8 items for girls.

Table 4. Main syndromes for boys and girls (N=961)

<u>Anxious/depressed</u>		<u>Aggressive behavior</u>	
Item	Description	Item	Description
12	Loneliness	87	Moody
14	Crying	90	Dirty language
27	Jealous	94	Likes to annoy
32	Perfectionist	95	Strong character
33	Feels unloved	96	Thinks too much about sex
34	Ideas of persecution	97	Threatens
35	Low self-esteem	104	Raises his/her voice
38	Laughed at		
103	Unhappy, depressed		
112	Worried		
<u>Somatic complaints</u>		<u>Attention problems</u>	
Item	Description	Item	Description
51	Dizziness	8	Lack of concentration/attention
54	Exhaustion	9	Hard to not think of anything
56a	Pain or discomfort	10	Hard to sit still
56b	Headaches	13	Absentminded
56c	Nausea	17	Daydreamer
56e	Skin problems	78	Attention deficit, distracted
56f	Stomachaches		
56g	Vomiting		
56h	Other somatic complaints		
58	Scratching her/himself		
<u>Delinquent behavior</u>		<u>Thought problems</u>	
Item	Description	Item	Description
19	Tries to get attention	40	Hears nonexistent sounds
21	Property destruction	84	Strange behavior
22	Disobeys parents	85	Strange thoughts
23	Disobedient at school		
25	Doesn't get along with others		
26	Does not feel guilty		
28	Rule-breaker		
39	Problematic relations		
		<u>Social relations problems</u>	
		Item	Description
		65	Refuses to speak
		69	Reserved attitude
		71	Feels ashamed or ridiculous
		75	Shy
		77	Sleeps more than others
		79	Speech problems

Once the factor structures for the two samples had been found, and the first-order syndromes assigned, the main syndromes were derived. For the nature of the syndromes found to be considered the same in both samples, at least 50% of their items had to be common to them. Each main syndrome was comprised of the common items that concur in the same



category in the two samples. As a result, the seven main syndromes, common to both samples (“anxiety/depressed”, “somatic complaints”, “delinquent behavior”, “aggressive behavior”, “attention problems”, “thought problems” and “relational problems”) included a total of 10, 10, 8, 7, 5, 3 and 6 items, respectively, sharing 62.50%, 83.33%, 72.72%, 50%, 52.63%, 50% and 85.71% of common items, respectively. Table 4 describes the seven main syndromes that include the items common to both samples of girls and boys.

Then the additive scales were found separately for both samples, for the main syndromes and first-order (sum of the raw scores for each subject on the different items that make up the factor) and to calculate the correlation matrices existing between the scales for boys, girls and the total. Table 5 shows the descriptive statistics for girls and boys for the first-order syndromes.

Table 5. Descriptive first-order syndrome statistics for boys and girls (N=961)

Syndromes	Boys <i>M</i> ( <i>SD</i> )	Girls <i>M</i> ( <i>SD</i> )	Main <i>M</i> ( <i>SD</i> )
Anxious/depressed	6.81 (5.01)	6.26 (4.53)	4.34 (3.45)
Aggressive behavior	2.04 (4.49)	7.52 (4.92)	4.28 (2.73)
Somatic complaints	3.56 (3.66)	3.07 (3.39)	2.70 (3.05)
Attention problems	5.78 (3.06)	8.58 (4.09)	4.69 (2.63)
Delinquent behavior	3.71 (3.19)	3.67 (3.16)	2.78 (2.54)
Thought problems	1.49 (1.80)	1.95 (1.78)	0.71 (1.14)
Relational problems	3.45 (2.59)	3.89 (2.82)	3.02 (2.30)

As shown in Table 5, the averages of first-order syndromes in the sample of boys varied from ( $M = 1.49$ ;  $SD = 1.80$ ) in Thought problems to ( $M = 6.81$ ;  $SD = 5.01$ ) in Anxious/depressed. Averages of the first-order syndromes in the sample of girls varied from ( $M = 1.95$ ;  $SD = 1.78$ ) in Thought problems to ( $M = 8.58$ ;  $SD = 4.09$ ) in Attention problems. Finally, total sample averages among the first-order syndromes varied from ( $M = 0.71$ ;  $SD = 1.14$ ) in Thought problems to ( $M = 4.69$ ;  $SD = 2.63$ ) in Attention problems.

Results also show that the correlations between first-order syndromes in the sample of boys varied from ( $r = 0.09$ ;  $p < 0.001$ ) (between Relational problems and Thought problems) and ( $r = 0.56$ ;  $p < 0.001$ ) (between Delinquent behavior and Aggressive behavior) and ( $r = 0.59$ ;  $p < 0.001$ ) between Attention problems and Somatic complaints). Correlations between the first-order syndromes in the sample of girls varied from ( $r = 0.11$ ;  $p < 0.001$ ) (between Social Relational problems and Delinquent behavior) to ( $r = 0.59$ ;  $p < 0.001$ ) (between Attention problems and Somatic complaints). Finally, total sample correlations among the first-order syndromes varied from ( $r = 0.09$ ;  $p < 0.001$ ) (between Relational problems and Thought problems) and ( $r = 0.48$ ;  $p < 0.001$ ) (between Attention problems and Anxious/depressed).

Finally, as shown in Table 6, a second-order factor analysis was done for both samples of boys and girls and for the total, using the same methodology described above, applying the principal component methods for extracting factors and using varimax rotation on them. Table 6 shows the results for the second-order factor analysis for boys, girls and total. As shown, both younger boys (from 13 to 15) and the total had a single factor, made up of the seven first-order categories, explaining 49.77% and 43.25% of the total variance, respectively. The contrary is true of older boys (16 to 18 years old) who have two factors explaining 58.44% of the total variance, referring to internal symptomology (anxious/depressed, somatic complaints and relational problems) and external (aggressive behavior, attention problems, delinquent behavior and thought problems). Thus girls basically had two factors that explain 63.68% of the total variance and reflect separation of internalizing syndromes (anxious/depressed, somatic complaints and relation problems) and externalizing (aggressive behavior, attention problems, delinquent behavior and thought problems).

Table 6. Second-order factor analysis for boys, girls and total

Second order syndromes	First order syndromes	(n=207)	(n=549)	First order syndromes	(n=205)	(n=961)
	Two factors	Boys (ages 16-18)	Girls (ages 13-18)	Single factor	Boys (Ages 13-15)	Total (Ages 13-18)
		Weights	Weights		Weights	Weights
Internalizing	Anxious/depressed	0.72	0.69	Anxious/depressed	0.79	0.73
	Somatic complaints	0.52	0.61	Somatic complaints	0.70	0.63
	Social relations p.	0.86	0.88	Aggressive b.	0.76	0.68
Externalizing	Aggressive b.	0.77	0.79	Attention problems	0.74	0.76
	Attention problems	0.54	0.68	Delinquent b.	0.75	0.69
	Delinquent b.	0.73	0.76	Thought problems	0.66	0.52
	Thought problems	0.70	0.73	Relational problems	0.45	0.52
Total variance explained		58.44%	63.68%		49.77%	43.25%

#### 4. Discussion and Conclusions

The purpose of this study is to explore the factor structure of the Achenbach, & Rescorla (2000, 2001) version of the YSR/11-18 in a sample of Spanish adolescents. All of the analyses were done separately for the samples of boys and girls to demonstrate the similarities and differences in the factor structure as well as to derive the main syndromes common to both sexes. To do this, a factor analysis of the 105 items on problem behavior in the YSR/11-18 was done to find the least number of categories or factors that reproduce the correlations between them, as argued by Harman (1980). The 14 items on socially adaptive behavior were excluded from the analysis because they form a clear factor referring to socially desirable behavior (Achenbach, & Rescorla, 2000, 2001). The specific factor extraction technique used to derive the syndrome categories that tend to concur in the two samples was the principal components method.

The similarity in content of the seven factors found in the samples of boys and girls could be due to the high homogeneity of the participants in the study, as they were all adolescents between 13 and 18 years of age attending school in the province of Granada (Spain). The first three factors (Anxious/depressed, Aggressive behavior and Somatic complaints) appear in the same order in both samples due to their eigenvalues and the variance they explain. In the fourth place is Delinquent behavior for the boys and Attention problems for the girls. In fifth place, we find Thought problems for boys and Delinquent behavior for girls. The six place is taken by Attention problems and Thought problems for boys and girls, respectively. The last was the Social relations factor for both sexes.

From these seven categories, the following main syndromes common to both sexes were derived: Anxious/Depressed, Somatic complaints, Delinquent behavior, Aggressive behavior, Attention problems, Thought problems and Relational problems. These factors were derived by including the items that concur in the same category for both samples. There are few studies concerned with clarifying the factor structure of the YSR/11-18. One of them is Achenbach (1991a) in which he concluded that there were eight narrow-band "main syndromes" the same for both sexes: Withdrawn, Somatic complaints, Anxious/Depressed (the three comprising the broadband internalizing scale), Delinquent behavior, Aggressive behavior (the two comprising the narrow-band externalizing scale), Social problems, Thought problems and Attention problems. In spite of the different origin of the samples of adolescents used, both in our study and in Achenbach's (1991b), six of the main syndromes coincide: Somatic complaints, Anxious/Depressed, Delinquent behavior, Aggressive behavior, Thought problems and Attention problems.

In Spain, Lemos et al. (1992a) reported seven factors for girls similar to those found by us and nine for boys. In addition to the seven categories found in this study, they considered another two categories (Antisocial behavior and Anxiety). Moreover, six of the seven main syndromes (Anxious/depressed, Somatic complaints, Aggressive behavior, Delinquent behavior, Thought problems and Relational Problems) derived in the work of these authors had names similar to those used by us, and many of the items coincided. The seventh category name (Attention seeking) and item content were different from the one found in this study (Attention problems). The results found by Lemos et al. (1992a) may be considered very similar to ours, which may be due to the similarity in the characteristics of the samples of adolescents attending school used in both studies. The slight differences in results between the two studies may be due to the use of different versions of the YSR/11-18. While the Lemos et al. (1992a) study used the Achenbach (1991b) version of the YSR/11-18, this study used the Achenbach and Rescorla (2000, 2001) version.

In another study done by Lemos et al. (2002) with the Achenbach (1991a) version of the YSR/11-18, eight main syndromes were derived (Depressed, Oral aggressive, Delinquent behavior, Thought problems, Somatic complaints, Social relations problems, Attention seeking and Phobic-anxious behavior) from the nine first-order factors derived for both sexes. Only three main syndromes (Delinquent behavior, Thought problems and Somatic complaints) coincide with those found in our study. The rest of the syndrome names and contents of the items clustered were different from those reported by us. It should be pointed out that the sample used in the Lemos et al. (2002) study was mostly (2.529) made up of students from 11 to 18 years of age at many public primary and secondary schools in Asturias, while the remaining 304 adolescents were from four secondary schools in the Region of Madrid. The sample is therefore more heterogeneous than the one selected by us, which could explain the differences found in the results of the two studies, added to the fact that different versions of the YSR/11-18 were found as mentioned. Another recent studies (Kirchner et al., 2006; Lacalle et al., 2014; Sainero et al., 2015; Yates et al., 2014), that used the YSR/11-18 measurement in Spanish populations, had distinct objectives than those ones established in the studies of Lemos et al. (2002a, 2002b, 2002c), and related to the factor structure of this instrument.

In this context, the YSR/11-18 was used in some international studies. In Mexico, García, & Palos (2005) found that the factors in the Achenbach, & Rescorla (2000, 2001) version hold in the Mexican version of the YSR/11-18, although there are some differences. While in the Mexican version there are 6 factors, one for externalizing problems and 5 for internalizing problems, in the original YSR/11.18, there are 5 scales, three subscales for Internalizing problems, one for Social problems, one for Thought problems; one for Attention problems and two subscales for Externalizing problems. In

Portugal, Cruz, Narciso, Pereira, & Sampaio (2014) used a short form of Portuguese version of the YSR/11-18, where the findings confirmed that the YSR short form provides a good fit to the data, explains similarly the variance on several criteria compared with the longer version, and is sensitive to sex and age differences. In Ethiopia, Geibel et al. (2016) found that across the eight syndrome scales, the YSR best measured the diagnosis of anxiety /depression and social problems among young women, and attention problems among young men, concluding that the YSR has enough reliability and validity in identifying young vulnerable women and men with the mentioned problems.

Our second-order factor analysis results showed that, older boys (16-18) and girls, showed two factors corresponding to a separation between internalizing syndromes (Anxious/depressed, somatic complaints and relational problems) and externalizing (Aggressive behavior, Attention problems, Delinquent behavior and Thought problems). These two second-order factors referring to internalizing vs. externalizing psychopathology could allude to a separation between emotional and behavioral disorders, respectively, as defended by Lemos et al. (1992a, 2002). Paradoxically, our study demonstrates that both older boys and girls had similar internalizing and externalizing psychopathologies, contrary to findings by González, & Cueto (2000), who observed that girls had a different internalizing pathology from the externalizing pathology reported by boys. Also, the younger boys (13-15 years old) in contrast to the older boys had a single factor encompassing the seven main syndromes that we found. It was found that the correlations between the different scales of the YSR/11-18 for girls and boys were similar but slightly higher for girls on anxious/depressed and thought problems (Kirchner et al., 2006). Also, in another study effectuated in a sample of 138 young Spanish people aged from 11 to 18 who were in residential care, results show low and moderate levels of concordance between the information given by the young people and their educators, with higher levels of agreement in externalized problems, in a similar way as the results found in research with samples of parents and children (Sainero et al., 2015). In recent study, the evaluation of adolescents, families and teachers shows that attention problems explain low school performance, in addition to the externalizing of problems indicated by the adolescents and the isolation or depression indicated by the teachers (Rosso, & Helena, 2017).

Finally, socialization processes have been a theme of utmost interest to psychology. As through those individuals acquire notions about social regulation, which allows them to adapt to the culture pertaining them. Besides playing an important role in psychosocial adjustment, socialization is present in the vast psychology literature, which indicates a meaningful connection between socialization and psychological adjustment. In the first socialization individuals get in touch with, probably the principal ones related to the internalization of social norms and patterns, occur within the family, and parents are the main agents of socialization. This socialization extends throughout adolescence and its effects will be present in the behavioral repertoire of each individual in the course of his lifetime (Baumrind, 1971, 1983; Lewis, 1981). In Spain, according to the General Attorney, the total number of complaints has doubled in the past five years, from just under 2,500 to more than 5,000 cases in 2010. Ibabe and Jaureguizar (2010) provide data from the Basque Country that set the child-to-parent violence percentages between 13% and 25%, and, in a later study (Ibabe, & Jaureguizar, 2011), they found that 21% of boys and girls participating had used physical violence against their parents, another 21% had used psychological violence (verbal) and half of them (46%) had used emotional violence (blackmail). Also, Van Der Ende, & Verhulst (2005) found that adolescents reported higher levels of problems than parents and teachers for all types of behavior. Parents reported higher levels of problem behavior than teachers. Gender differences among informants were dependent on type of problem behavior. With increasing age, scores of adolescents, parents, and teachers diverged for most types of problems, with larger differences for older adolescents than for younger adolescents. Norms for adolescents need age adjustments for reports by adolescents, parents, and teachers.

Related to the socialization process, In Andalusia, Zubeidat, Fernández-Parra, Sierra, & Salinas (2008) revealed that the factors associated with anxiety and social phobia is a subject of recent interest in mental health. Specifically, shyness in children seems to act as an early expression of social phobia that may later consolidate into a clinical entity. The presence of certain psychopathologies and particular styles of child rearing in parents, are perceived by their children, are associated with the emergence of social phobia in adolescence. On the other hand, social anxiety disorder during adolescence or early adulthood may predict subsequent depressive disorders. The presence of both disorders (anxiety and social phobia) during adolescence increases the probability of suffering from them recurrently in early adulthood. Family structure and cohesion as well as stressful life events have been found to be associated with mood disorders during the childhood-youth period. However, studies conducted with young subjects are scarce, even though understanding the factors associated to different psychopathologies in the youth has proven of great value in clinical practice and epidemiology. For this reason, the researchers attempt to evaluate, in a sample of three groups of adolescents (social anxiety, other psychopathologies and without psychopathologies) the possible demographical factors, competences and clinical indexes that could be associated with the different conditions under consideration. The results of this study indicated that sex and couple relationships significantly affect the probability of manifesting social anxiety and other psychopathologies in adolescents, respectively. Some competences significantly affect the probability of developing

social anxiety, whereas others affect the probability of developing other psychopathologies. The majority of the 46 clinical indexes assessed in the present study demonstrate a significant effect on the probability of developing both conditions. Also, Zubeidat, Fernández-Parra, Sierra, Vallejo, & Ortega (2009) analyzed the psychosocial competences and psychopathological characteristics assessed by the YSR/11-18 in a sample of Spanish adolescents from 13-18 years. The results indicated that men scored high in various social activities and externalized psychopathologies, while women have high scores for performance in different tasks and internalized symptoms. Younger adolescents showed higher scores than older ones in participation in groups and organizations, as well as in most of the YSR/11-18 syndromic scales, while older adolescents preferred no sports activities and works or tasks. Students at Compulsory Secondary Education and Non-Compulsory Secondary Education showed more activity than those in Vocational Training Cycles in all psychosocial competencies, but the latter overcame the first in most of the syndromic scales. Adolescents without romantic relation scored higher in the psycho-social competencies than those who enjoyed romantic relation, although the second ones showed more psychopathology than the first ones. Finally, working (in addition to studying) did not seem to be relevant in determining differences regarding the psychosocial competencies and syndromic scales. In a recent study conducted by Musitu, Suarez, & Del Moral (2015) with a sample of 2,399 Spanish adolescents, it was observed that, usually, styles of socialization more related to school violence and its different dimensions were, in the positive direction, authoritarian and neglectful. Inversely, the authoritative and indulgent ones, being the indulgent style the one with the highest correlation coefficient.

In conclusion, the present study shows seven first-order common factors in both, boys and girls: Anxious/Depressed, Somatic Complaints, Delinquent Behavior, Aggressive Behavior, Attention Problems, Thought Problems and Relational Problems. Also, a single second-order factor in younger males appear when factoring of these seven syndromes and older males and females showed labeled internalize and externalize symptoms, resembling the results obtained in former studies with Spanish population.

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